

Design & Technology: Innovator Suite

OCR GCSE in Design and Technology: Food Technology J302

OCR GCSE (Short Course) in Design and Technology: Food Technology J042

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IMPORTANT

The Controlled Assessment evidence (candidate portfolios) can be in paper **OR** electronic format.

Centres who intend submitting **ELECTRONIC** evidence **MUST**:

Be a registered EDI (Electronic Data Information) user. For more information on EDI please go to the OCR website at www.ocr.org.uk or refer to the Entry Instructions within the Administrative Guide and Entry Procedures (E3) folder.

Basic guidance on the production of electronic Controlled Assessment is provided in Appendix D.

For further guidance on requirements for electronic Controlled Assessment, contact
general.qualifications@ocr.org.uk

Contents

1	About these Qualifications	5
1.1	GCSE (Full Course)	5
1.2	GCSE (Short Course)	6
1.3	Qualification Titles and Levels	6
1.4	Aims	7
1.5	Prior Learning/Attainment	7
2	Summary of Content	8
2.1	GCSE Units	9
2.2	GCSE (Short Course) Units	9
3.1	Unit A521: <i>Introduction to designing and making</i>	10
3.2	Unit A522: <i>Sustainable Design</i>	12
3.3	Unit A523: <i>Making quality products</i>	14
3.4	Unit A524: <i>Technical aspects of designing and making</i>	16
4	Schemes of Assessment	21
4.1	GCSE Scheme of Assessment	21
4.2	GCSE (Short Course) Scheme of Assessment	24
4.3	Entry Options	25
4.4	Tiers	25
4.5	Assessment Availability	25
4.6	Assessment Objectives	26
4.7	Quality of Written Communication	27
5	Controlled Assessment	28
5.1	The controlled assessment units	28
5.2	Task setting	28
5.3	Task taking	29
5.4	Task marking	31
5.5	Minimum Requirements for Controlled Assessment	33
6	Technical Information	34
6.1	Making Unit Entries	34
6.2	Terminal Rules	34
6.3	Unit and Qualification Re-sits	34
6.4	Making Qualification Entries	35
6.5	Grading	35
6.6	Result Enquiries and Appeals	36
6.7	Shelf-Life of Units	36
6.8	Guided Learning Hours	36
6.9	Code of Practice/Subject Criteria/Common Criteria Requirements	37
6.10	Prohibited Qualifications and Classification Code	38
6.11	Disability Discrimination Act Information Relating to this Specification	38
6.12	Arrangements for Candidates with Particular Requirements	38
6.13	OCR Repository	39

Contents

7 Other Specification Issues	40
7.1 Overlap with other Qualifications	40
7.2 Progression from these Qualifications	40
7.3 Spiritual, Moral, Ethical, Social, Legislative, Economic and Cultural Issues	40
7.4 Sustainable Development, Health and Safety Considerations and European Developments consistent with international agreements	40
7.5 Avoidance of Bias	40
7.6 Language	41
7.7 Key Skills	41
7.8 ICT	41
7.9 Citizenship	42
Appendix A: Grade Descriptions	43
Appendix B: Marking Criteria for Controlled Assessments	44
Appendix C: Coursework Themes – Unit A561 and Unit A563	50
Appendix D: Guidance for the Production of Electronic Controlled Assessment	52

1 About these Qualifications

This booklet contains OCR's GCSE (Short Course) and GCSE specification in Design & Technology: Food Technology for teaching from September 2009.

This fresh approach to GCSE Design & Technology: Food Technology reflects the status of the subject within the National Curriculum and the positive effects of the Key Stage 3 initiative now working its way through to KS4.

This specification provides an innovative and imaginative qualification rewarding creativity and reflecting the contemporary use of Information technology. One key element of this specification is to encourage candidates to recognise the contribution they can make to the environment through careful consideration and selection of sustainability resources.

The format of this specification allows for candidates to approach the course in a variety of ways. Being unitised, activities can be organised to run in harmony with the design & technology department making best use of the resources available. Candidates can follow a traditional approach to the course entering for all the units at the end of their course or they can be entered for individual units in any January and June session (see Technical Information section for terminal and retake rules).

This specification encourages candidates to be inspired and innovative by following a broad, coherent, satisfying and worthwhile course of study. Specifically candidates will actively:

- be engaged in the processes of design and technology in order to develop as effective and independent candidates.
- be involved in making decisions, consider sustainability and combine practical skills with knowledge and understanding in order to design and make quality products
- explore ways in which aesthetic, technical, economic, environmental, ethical and social dimensions interact to shape designing and making to meet human needs
- analyse existing products and produce practical solutions to needs, wants and opportunities, recognising their impact on quality of life
- develop decision-making skills through individual and collaborative working
- understand that designing and making reflect and influence cultures and societies, and that products have an impact on lifestyle
- develop skills of creativity and critical analysis through making links between the principles of good design, existing solutions and technological knowledge.

1.1 GCSE (Full Course)

From September 2009 the GCSE is made up of **four** mandatory units which are the **two** corresponding GCSE (Short Course) units, forming 50% of the overall full course assessment and **two** further units one of which is internally assessed and forms 30% of the overall assessment and the other is externally assessed and forms 20% of overall assessment.

1.2 GCSE (Short Course)

The GCSE (Short Course) is both a ‘stand-alone’ qualification and also the first half of the corresponding GCSE. The GCSE (Short Course) is assessed at the same standard as the corresponding two year GCSE course.

From September 2009 the GCSE (Short Course) is made up of **two** mandatory units, one of which is internally assessed and forms 60% of the overall assessment and the other is externally assessed and forms 40% of overall assessment. These units correspond to **two** units of the GCSE (Full course) and thus allow co-teachability and flexibility in scheduling and timetabling.

1.3 Qualification Titles and Levels

These qualifications are shown on a certificate as:

- OCR GCSE in Design & Technology: Food Technology
- OCR GCSE (Short Course) in Design & Technology: Food Technology

These qualifications are approved by the regulatory authorities (QCA, ACCAC and CCEA) as part of the National Qualifications Framework.

Candidates who gain Grades D to G will have achieved an award at Foundation Level 1 (Level 1 of the National Qualifications Framework).

Candidates who gain Grades A* to C will have achieved an award at Intermediate Level 2 (Level 2 of the National Qualifications Framework).

1.4 Aims

The aims of this specification are to provide opportunities for candidates to develop knowledge and understanding through:

- responding creatively to briefs, developing their own proposals and producing specifications for products and associated services
- generating, developing and communicating ideas in a range of ways, using appropriate strategies
- recognising there are moral, cultural, economic, environmental, and sustainability issues inherent in design and technology
- using their understanding of other designers and or products to inform their own practice
- planning and organising activities and then shaping, forming, mixing, assembling and finishing materials, components or ingredients as appropriate
- choosing and using hand and/or machine tools, equipment and computer-aided design/manufacture (CAD/CAM) facilities as appropriate
- solving technical problems
- reflecting critically when evaluating and modifying their ideas and proposals to improve the products throughout inception and manufacture
- designing creatively by generating, developing, planning and communicating ideas
- making products, by working skilfully and safely with tools, equipment, components and materials
- making products which meet human need, are functional and appropriate to a more sustainable future
- applying systems and control, CAD/CAM, digital media and new technologies, where appropriate to the focus areas
- analysis and evaluative processes.

1.5 Prior Learning/Attainment

Candidates who are taking courses leading to this qualification at Key Stage 4 should normally have followed the corresponding Key Stage 3 Programme of Study within the National Curriculum.

Candidates entering this course should have achieved a general educational level equivalent to National Curriculum Level 3, or a Distinction at Entry Level within the National Qualifications Framework.

2 Summary of Content

Outline of Concept

This fresh approach to GCSE Design & Technology: Food Technology reflects the status of the subject within the National Curriculum and the positive effects of the Key Stage 3 initiative now working its way through to KS4.

This specification provides an innovative and imaginative qualification rewarding flair, imagination and reflecting the contemporary use of materials and Information technology. One key element of this specification is to encourage candidates to recognise the contribution they can make to meeting human needs and the environment through careful consideration and selection of sustainable resources.

The specification, which is one of six specifications making up the OCR Innovator suite of GCSE Design & Technology qualifications aims to provide a challenging yet very rewarding course for candidates and teachers alike.

In both the Full and Short Course, candidates have the opportunity to work with design concepts and materials in ways which recognise the need for wise choices being made in terms of meeting the needs of people, society, and the environment.

Taught as suite of qualifications there are opportunities for efficient use of both human and physical resources. Teachers can be confident in the knowledge that they are part of a team preparing candidates for a common goal.

This particular specification aims to promote the careful and thoughtful use of ingredients and components to encourage the development of a wide range of skills and knowledge to produce creative, innovative food products.

2.1 GCSE Units

Unit A521: *Introduction to designing and making*

- Developing Research and Investigation skills
- Developing drawing skills where appropriate
- Modelling/ trialling
- Evaluating process

Unit A522: *Sustainable Design*

- Consideration of products
- Consideration of the environment
- Consideration of society and the economy

Unit A523: *Making quality products*

- Designing for a need
- Working with tools and equipment
- Evaluating the product

Unit A524: *Technical aspects of designing and making*

- Working with tools, materials
- Selecting processes
- Designing for success

2.2 GCSE (Short Course) Units

Unit A521: *Introduction to designing and making*

- Developing Research and Investigation skills
- Developing drawing skills
- Modelling
- Evaluating process

Unit A522: *Sustainable Design*

- Consideration of products
- Consideration of the environment
- Consideration of society and the economy

3.1 Unit A521: *Introduction to designing and making*

This unit aims to give candidates with an introduction to Designing and making from Food Technology.

Candidates must select one of the published themes (see Appendix C) as a starting point for this coursework unit which forms a Controlled Assessment element of this specification. Once selected, the candidate will then need to identify a starting point that is associated with the theme. For example if the chosen theme is 'Special Diet' a candidate may decide to design and trial a product suitable for a coeliac.

Candidates then undertake research associated with the specific product before establishing their own design brief and detailed specification for an improved or similarly functioning product. They then develop their design and use trialling and testing before making and testing their prototype. Throughout the task the candidate will record research and design developments using a portfolio to include photographs and other digital media.

In order to skilfully design, trial, make and test their prototype candidates should undertake the processes outlined below.

This unit is a controlled assessment unit. For further details see section 5

Candidates will be required and assessed on their ability to:

Demonstrate Cultural Understanding	<ul style="list-style-type: none">• Identify how cultural issues have influence of food products• Identify how wise food choices can affect healthy lifestyles
Demonstrate Creativity	<ul style="list-style-type: none">• Use appropriate recording and drawing techniques including the use of ICT• Identify complex associations linking principles of good design and technological knowledge• Identify trends in existing products and fully evaluate them against the needs of the intended user.
Develop Designing Skills	<ul style="list-style-type: none">• Produce an appropriate and considered response to a design brief• Produce a detailed specification for the product• Record creative design ideas using appropriate methods of presentation• Use appropriate modelling/ trialling techniques to aid product development• Use ICT / nutritional analysis to support design development• Record chosen design idea using appropriate methods
Demonstrate Good Making Skills	<ul style="list-style-type: none">• Plan and organise activities• Make reasoned decisions about materials/components applying relevant nutritional data• Select and use appropriate materials• Select and use appropriate equipment• Work hygienically and safely to produce high quality food product• Show economical consideration of waste• Demonstrate a practical and thorough understanding of the methods and techniques used in the making of practical products• Use a wide range of skills to produce high quality products

Demonstrate Critical
Evaluation Skills

- Evaluate the food product through detailed testing against the design specification
- Present meaningful conclusions leading to suggestions for possible improvements

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3.2 Unit A522: Sustainable Design

This unit aims to develop a candidate's knowledge and understanding of sustainability, environmental concerns, cultural, moral and social issues. Candidates will look at how design technology has evolved through examination of the products from the past and present. Candidates need to consider how future designs will impact on the world in which we live. Candidates will need to study examples of both old and new products in order that they might gain awareness and understanding of recent trends and innovations in design and production, labelling, packaging and the impact that the design of such products is having on the environment, society and the economy.

Moral, cultural, economic, environmental, and sustainability issues are inherent in design technology. Within the commercial context, the product life cycle, choice and use of ingredients, and eventual disposal of products are of paramount importance.

Working with Food Technology, candidates should develop knowledge and understanding of the subject content listed below.

The assessment of this unit is through an externally set and marked test.

The 6R's	<p>Recycle</p> <ul style="list-style-type: none">• The choice of packaging materials• Recycling of tins, plastic, glass, card and paper• Composting <hr/> <p>Reuse</p> <ul style="list-style-type: none">• Products that can be reused for either the same or a new purpose• Re use of left over ingredients to make other food products <hr/> <p>Reduce</p> <ul style="list-style-type: none">• Reduce the effects on health by using balanced recipes, low in fat, salt and sugar• Reduction in the use of processed foods• Reduce energy in methods of cooking• Transportation of food and materials. Eco Footprint• Ways of reducing waste food• Reduce the use of pesticides. Organic food production• Buy products with little or no packaging <hr/> <p>Refuse</p> <ul style="list-style-type: none">• Issues relating to sustainable design in packaging• Refuse high fat, salt and sugar foods <hr/> <p>Rethink</p> <ul style="list-style-type: none">• Rethink the average UK high fat diet• Examine the impact of food products on health• Rethink the use of healthy ingredients in creative designs <hr/> <p>Repair</p> <ul style="list-style-type: none">• The function of nutrients in repairing and maintaining a healthy body
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Product Analysis and the Design of Products

Social Issues

- Assessing consumer needs
- Signs and symbols giving valuable information about materials and products and safety issues
- Trends in food consumption

Moral Issues

- Safety within the food preparation area.
- Safety of food products/safe shelf life
- Fair trade products and its effect on the conditions of the workers
- GM food production
- Intensive/factory farming
- Free range production of foods
- The use of additives in food products

Cultural Issues

- The impact of different cultures on modern products
- Use of local produce/farmer's markets

Environmental Issues

- Understand and be able to select ingredients/materials that are both suitable and sustainable
- The use of seasonal foods
- Carbon footprint – transportation of materials and goods, energy usage in production and use. Life cycle analysis

Design issues

- Identify how good design and product choice improves the quality of life.
- Examine the way that designers respond to changing styles, taste, technological advances, and environmental pressures.
- The impact of globalisation on ingredients/food products

Delivery of the Unit

This unit should be delivered through a number of mini-tasks. These tasks will vary in nature, some will be based around group discussion, videos, industrial visits, supermarket surveys. Research could involve the internet, interviews, questionnaires, experimental work. Some will involve the candidate carrying practical food activities

3.3 Unit A523: *Making quality products*

In this Unit candidates will be expected to further develop their skills and abilities gained while undertaking Unit A521 in order to design and make a creative and quality product. The type of project selected needs to be challenging but realistic in terms of the resources and time available. Candidates should be encouraged to consider their own needs/requirements or that of an identified user group as well as the situation in which the product will be used.

Candidates will be required to consider the focus of the design brief before developing a design specification. Candidates need to demonstrate their ability to plan, develop creative and original design ideas and carry out a range of practical activities.

Candidates will be expected to critically evaluate their ideas against the design specification to identify, with reasons, the chosen design proposal for product development. As a result of product development candidates will be expected to give reasoned decisions for the materials and equipment required for the production of the final product. Throughout the task the candidate will record design developments and production using a portfolio to include photographs and other digital media.

Candidates will be expected to test and critically evaluate their final product against a product specification.

This unit is a controlled assessment unit. See section 5 for further details.

Candidates will be required and assessed on their ability to:

Develop and demonstrate designing skills

- Use appropriate recording and drawing techniques
- Identify complex associations linking principles of good design and technological knowledge
- Produce an appropriate and innovative response to a design brief
- Produce a detailed design specification for the product
- Use detailed notes and annotated drawings (where appropriate) to record creative design ideas
- Use appropriate techniques to aid product development
- Use ICT to support design development
- Apply knowledge of digital media and new technologies as appropriate
- Record chosen design idea using an appropriate method of presentation

Demonstrate good making/workshop skills

- Plan, organise and record key activities throughout the portfolio to include photographic evidence
- Make reasoned decisions about materials / components
- Produce a detailed product specification
- Select and use appropriate materials
- Select and use appropriate tools and equipment
- Work hygienically and safely with a range of ingredients
- Show economical consideration of waste
- Demonstrate a practical and thorough understanding of the methods and techniques used in the making of products
- Use a wide range of skills to produce high quality products

Demonstrate critical evaluation skills

- Evaluate through detailed testing against the product specification
- Present meaningful conclusions leading to suggestions for possible improvements

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3.4 Unit A524: *Technical aspects of designing and making*

This unit focuses on the knowledge, skills and understanding underpinning the design and manufacture of products made from Food Technology.

The assessment of this unit is through an externally set and externally marked test.

Candidates will need a knowledge and understanding of:

- Designing and making quality commercially manufactured products.
- Planning production with consideration to the use of time and resources.
- Performance characteristics of different materials including ‘Smart’ and modern.
- Tools and equipment used to make quality manufactured products, including industrial methods and new technologies.
- Processes and techniques used to make quality manufactured products, both decorative and functional.
- The impact that the use of Food Technology has on the environment, including the need to consider sustainability.
- Health and Safety issues.

Materials

Design Process

Candidates should develop a knowledge and understanding of:

- Provide a detailed description of the design need.
- Consideration of information, food trends, consumer preference, dietary needs, media influence, and sustainability.
- Identify the users and the market for the intended product.
- To understand the purpose of a design brief.
- To understand the purpose of a design and product specification
- To be able to evaluate their own and existing products to determine their suitability for the intended user and their impact on the environment.
- To be able to generate and record design proposals, understanding the relevance of function and aesthetics (sensory and functional consideration of design ideas i.e. taste, texture, and appearance).
- To understand how products are developed including costing, being able to match materials and components with tools, equipment and processes when deciding how to make the product
- To be able to plan for the production of products.
- To be able to critically evaluate products and suggest modifications.
 - Sensory analysis including rating / ranking, and to be able to records these results in appropriate ways. (star profiles and charts)

Industrial Production

Candidates should develop a knowledge and understanding of:

- Use of standardised parts and components
- CAD / CAM as used in industry.

Diet and Nutrition

Candidates should develop a knowledge and understanding of:

- The function, deficiencies and sources in the diet of:
 - protein,
 - fats,
 - carbohydrates (sugar, starch, fibre),
 - vitamins (water soluble vitamins – C and B complex, fat soluble vitamin A and D)
 - minerals (calcium, iron, sodium (salt) fluoride, phosphorus,)
 - water
- The importance of a balanced diet and the application of current healthy eating recommendations.
- The relationship between food intake and physical activity (energy balance).
- the nutrients found in and the structure of a range of common foods: cereals, fruit, vegetables, meat, fish, cheese, fats and oils, milk, eggs and alternative protein foods
- Understand how to modify dishes to promote health through altering or substituting ingredients and / or by changing the method of cooking
- other factors that affect people's choice of food: availability, cost, personal preferences, cultural preferences, religion, lifestyle, health, storage and cooking facilities, recent food trends and issues, food scares, advertising, and promotions, seasonability, local food, sustainability
- investigation of food products aimed at different age groups,
- people with different dietary requirements:
 - diabetics,
 - vegetarians,
 - coeliacs (gluten),
 - calorie controlled,
 - those with allergies to nuts;
 - heart disease (CHD),
 - pregnancy
-

Function of Ingredients

Candidates should develop a knowledge and understanding of:

- the function of ingredients in a range of products: flour, sugar, fats, oils, eggs.
- The use of raising agents, additives and the fortification of foods.

Processes and skills

Candidates should have the knowledge of the following skills and processes and have opportunities to use some of them in their practical work:

- heat transference through appropriate methods of cooking: boiling, baking, grilling, microwaving, steaming, frying, roasting.
- The effect of heat on different foods.
- Baked products: rubbing in creaming, melting, whisking, all-in-one, kneading, folding, rolling, shaping, cutting.
- Sauce making – roux, blended, all-in-one in a range of sweet and savoury products.
- Fruit and vegetable preparation which could include soup making, desserts, vegetarian dishes.
- Preparation of meat, fish, dairy products and alternative protein foods.
- Cooking and preparation of staple foods.
- The use of pre-manufactured food products such as puff pastry, filo pastry
- Finishing techniques: garnishing, glazing, decorating of food productsKnowledge and understanding of the basic food equipment; how to select the appropriate tool and use it safely and effectively.
- Awareness of alternative tools and equipment which can be used for the same task.
- Safety checks to carry out on electrical equipment before use.

Tools and Equipment

- Knowledge and understanding of the basic food equipment; how to select and use the appropriate tool and use it safely and effectively
- Awareness of alternative tools and equipment which can be used for the same task

Principles of preservation and extending shelf life

Candidates should develop a knowledge and understanding of:

- safe shelf life for a food product.
- understand methods used to increase shelf life including freezing, chilling, cook chill, modified atmospheric packaging (MAP) UHT, canning, dehydration, vacuum packaging.

Health and Safety

Candidates should develop a knowledge and understanding of:

- Manufacturers, consumers need to use a range of tools and equipment in a safe and efficient way.
- The need to consider risk assessment (HACCP) and Quality Control
- The importance of safe and hygienic practices in the preparation, cooking, transportation and storage of foodstuffs;
- The need for legislation to ensure Health and Safety in the food industry, including food labeling.
- The need for Health and Safety legislation to protect the consumer, trading standards and the role of the Environmental Health Officer

Product Evaluation

- Establish the function of commercially manufactured food products; determine what the product was designed to do.
- Determine the intended market or user of the product.
- Identify the ingredients, and components from which products are made. Give reasons why specific ingredients have been used by referring to their properties.
- Identify the process used to make the product.
- Compare a variety of food products designed to meet the same need.
- Evaluate their own and commercially manufactured food products against moral, cultural, environmental and sustainability issues.

Delivery of the Unit

In this unit, candidates could develop their knowledge and understanding through:

- Focused practical tasks that develop a range of technical skills and knowledge of materials and processes.
- Product Analysis.
- Design and make assignments that include activities relating to sustainability of products and resources as well as industrial practices.

These tasks will vary in nature, some will be based around group discussion, others will involve the candidate working with ideas and media, researching concepts and recording information.

Activities may also involve visits to particular Technology Innovation centres, museums and industry.

Evidence should be collected and recorded in the form of a research report (not assessed) which can be used at the end of the unit for examination preparation..

4 Schemes of Assessment

4.1 GCSE Scheme of Assessment

GCSE Design & Technology: Food Technology (J302)

Unit A521: *Introduction to designing and making*

30% of the total GCSE (Short Course 60%) marks

20 hrs controlled assessment

60 marks

This unit will involve candidates designing and subsequently making a functional product. Candidates must select a theme set by OCR. See Appendix C. This theme can, however, be contextualised in order to best suit centre-specific circumstances.

- Tasks will be conducted under informal teacher supervision within tight guidelines specified by OCR. See section 5
- In addition to the formal 20 hours there should also be further teaching time to increase depth of knowledge and understanding before starting the controlled assessment.
- Teachers are required to ensure that candidates do **not** pursue the same theme for their work as submitted or intended for submission for Unit 523

The task will require the candidate to produce:

- A portfolio (A3/A4 size sheets or digital equivalent) showing design development and trialling which may include the use of ICT used to support the designing process
- A prototype product, capable of evaluation.
- A minimum of two digital images/photographs of the final product.
- Digital images/photographs of any testing and trialling used by the candidate when designing.
- A completed OCR cover sheet

The task must allow the candidate to:

- Develop and use Research and Investigation skills
- Develop Drawing skills where appropriate
- Use trialling
- Produce a prototype
- Evaluate the product

Candidates must use appropriate ICT to help with their work. This might include CAD/CAM, control programmes, data analysis, and ICT based sources for research and design relevant to the task.

The evidence presented for assessment must be submitted on paper or in electronic format. All digital evidence must be presented in an approved OCR format. See section 6.13

The whole internal assessment, including the final product, must not exceed 20 hours of work and be undertaken under informal teacher supervision. Some of the work, by its very nature, may be undertaken outside school under limited supervision e.g. research work, testing of the final product. See section 5 for further details.

It is not expected that the final product should accompany the portfolio during the external moderation process.

Assessment will be against the Internal Assessment Objectives; AO1, AO2 and AO3.
AO1 – 16 marks
AO2 – 36 marks
AO3 – 8 marks

This controlled assessment is marked internally and externally moderated

Unit A522: Sustainable Design

20% of the total GCSE (Short Course 40%) marks
1 hr written paper

60 marks

The paper will consist of questions that focus on sustainable design. Quality of written communication is assessed in this unit. See section 4.7

Section A: consists of fifteen multiple choice questions.

Section B: consists of three questions requiring answers that involve sketches, annotation and short sentences.

Assessment will be against the Assessment Objectives AO1, AO2 and AO3.

AO1 – 27 marks
AO2 – 21marks
AO3 – 12 marks

This unit is externally examined.

Unit A523: *Making quality products*

30% of the total GCSE marks
20 hrs controlled assessment

60 marks

This unit will focus on the design and manufacture of a prototype product from a theme set by OCR. See Appendix C. This should involve the candidate in the identification of a suitable design opportunity, generation of design ideas showing creativity, trialling and skilful manufacture of a quality product recording the key stages/processes of making and critical evaluation.

- Tasks will be conducted under informal teacher supervision within tight guidelines specified by OCR. See section 5
- In addition to the formal 20 hours there should be further teaching time to increase depth of knowledge and understanding before starting the controlled assessment
- Teachers are required to ensure that candidates do **not** pursue the same theme for their work as submitted or intended for submission for Unit 521

The task will require the candidate to produce:

- A portfolio (A3/A4 size sheets or equivalent) showing design development and modelling which may include the use of ICT used to support the designing process
- A product capable of evaluation.
- A minimum of two digital images/photographs of the final product.
- Digital images/photographs of any testing and trialling used by the candidate when designing.
- A completed OCR cover sheet

The task will allow the candidate to

- Design for a need
- Work with tools and equipment
- Make a product
- Evaluate the product

Candidates must use appropriate ICT to help with their work, including CAD/CAM, control programmes, data analysis, and ICT based sources for research and design relevant to the task.

The evidence presented for assessment must be a portfolio of work submitted on paper or in electronic format. All digital evidence must be presented in an approved OCR format. See section 6.13

The whole internal assessment portfolio, including the final product, must not exceed 20 hours of work and be undertaken under informal teacher supervision. Some of the work, by its very nature, may be undertaken outside school under limited supervision e.g. research work, testing of the final product. See section 5 for further details.

This unit is internally marked and externally moderated.
External moderation is Postal (paper or CD) or Web-based.

It is not expected that the final product should accompany the portfolio during the external moderation process.

Assessment will be against the Internal Assessment Objectives AO2 and AO3.

AO2 – 50 marks

AO3 – 10 marks

This controlled assessment is marked internally and externally moderated.

Unit A524: *Technical aspects of designing and making*

20% of the total GCSE marks
1 hour 15 minutes written paper
60 marks

The paper will consist of questions that focus on technical aspects of designing and making.

Section A consists of three questions based on the technical aspects of working with materials, tools and equipment.

Section B consists of two questions on the design of products reflecting the wider aspects of sustainability and human use. One of these questions will require a design response.

Assessment will be against the Assessment Objectives AO1 and AO3.

AO1 – 51 marks

AO3 – 9 marks

This unit is externally assessed.

4.2 GCSE (Short Course) Scheme of Assessment

Candidates taking the GCSE (Short Course) in Design and Technology: Food Technology (J042) will need to be entered for Unit A521 and Unit A522. The scheme of assessment for these units is contained within section 4.1.

4.3 Entry Options

GCSE candidates must be entered for the appropriate units. All four units for GCSE and two units (A521 and A522) for the Short Course GCSE

Candidates must also be entered at the end of the course for certification to claim their overall GCSE grade. Candidates should therefore be entered under the following certification codes:

OCR GCSE in Design and Technology: Food Technology – J302

OCR GCSE (Short Course) in Design and Technology: Food Technology – J042

4.4 Tiers

This scheme of assessment is untiered, covering all of the ability range grades from A* to G. Candidates achieving less than the minimum mark for Grade G will be ungraded.

4.5 Assessment Availability

There are two examination series each year, in January and June.

From January 2010 all units will be available for assessment

4.6 Assessment Objectives

Candidates are expected to demonstrate the following in the context of the content described:

AO1

- recall, select and communicate their knowledge and understanding in design and technology including its wider effects;

AO2

- apply knowledge, understanding and skills in a variety of contexts and in designing and making products;

AO3

- analyse and evaluate products, including their design and production.

AO weightings – GCSE

The relationship between the components and the assessment objectives of the scheme of assessment is shown in the following grid.

Unit	% of GCSE			Total
	AO1	AO2	AO3	
Unit A521: <i>Introduction to designing and making</i>	8	18	4	30
Unit A522: <i>Sustainable Design</i>	9	7	4	20
Unit A523: <i>Making quality products</i>		25	5	30
Unit A524: <i>Technical aspects of designing and making</i>	17		3	20
	34%	50%	16%	100%

AO weightings – GCSE (Short Course)

The relationship between the components and the assessment objectives of the scheme of assessment is shown in the following grid.

Unit	% of GCSE (Short Course)			Total
	AO1	AO2	AO3	
Unit A521: <i>Introduction to designing and making</i>	16	36	8	60
Unit A522: <i>Sustainable Design</i>	18	14	8	40
	34%	50%	16%	100%

4.7 Quality of Written Communication

Quality of written communication is assessed in unit A522.

Candidates are expected to:

- ensure that text is legible and that spelling, punctuation and grammar are accurate so that meaning is clear;
- use technical language as appropriate
- present information in a form that suits its purpose;
- use a suitable structure and style of writing.

5 Controlled Assessment

5.1 The controlled assessment units

Units A521 and A523 have been designed to be internally assessed, applying the principles of controlled assessment. Controls are set within the assessments so that validity and reliability are ensured and the assessors can confidently authenticate the candidates' work. These controls take a variety of forms in each of the stages of the assessment process: task setting, task taking and task marking. Within each of these three stages there are different levels of control. This section sets out the overall OCR approach, but the Scheme of Assessment sections of the units include more detail and any specific requirements.

5.2 Task setting

5.2.1 The OCR approach

OCR will assume a high level of control in relation to the setting of tasks. A number of controlled assessment tasks will be available from OCR for the controlled assessment units. These tasks have been designed to meet the full assessment requirements of the unit. Candidates will need to take part in a planned learning programme that covers the underpinning knowledge and skills of the unit in addition to completing the evidence requirements of the designated assessment tasks.

5.2.2 Using controlled assessment tasks

Centres can choose one from a number of theme based tasks offered by OCR. See Appendix C. These tasks can be used with a minimum amount of adaptation or they can be adapted so that they allow the usage of local resources available to any centre. These tasks may also be set within overarching scenarios and briefs more relevant to centres' own environment and targeted at their particular cohorts of candidates.

Controlled assessment tasks may be adapted by centres in ways which will not put at risk the opportunity for candidates to meet the Assessment Criteria, including the chance to gain marks at the highest level. For some units this may allow for little to be adapted other than cosmetic details eg the description and nature of a company on which a task is based. For other units the medium in which the candidates are working may be a matter of choice. Each controlled assessment task will include a section which briefly specifies the type and degree of adaptation which is appropriate.

The same OCR controlled assessment task must NOT be used as the practice material and then as the actual live assessment material. Centres should devise their own practice material using the OCR specimen controlled assessment task as guidance.

5.3 Task taking

5.3.1 The OCR approach

For GCSE in Design and Technology: Food Technology OCR will assume a medium level of control. The task taking parameters will be defined for several key controls and the remainder set by centres as outlined below.

5.3.2 Definitions of the controls

(a) **Authenticity control:** Candidates will complete all work for assessment under direct teacher supervision except as outlined below. For GCSE in Food Technology most, but not all, work for assessment would be under direct teacher supervision, for example, it is acceptable for some aspects of exploration to be outside the direct supervision of the teacher but the teacher must be able to authenticate the work and insist on acknowledgement and referencing of any sources used.

(b) **Feedback control:** Feedback to candidates will be encouraged but tightly defined. Within GCSE in Food Technology OCR expects teachers to supervise and guide candidates who are undertaking work which is internally assessed. The degree of teacher guidance in candidates' work will vary according to the kinds of work being undertaken. It should be remembered, however, that candidates are required to reach their own judgements and conclusions. When supervising tasks, teachers are expected to:

- Offer candidates advice about how best to approach such tasks;
- Review candidates' work, and provide advice at a general level. Teachers must not, however, provide detailed and specific advice on how the work may be improved to meet the assessment criteria;
- Exercise continuing supervision of work in order to monitor progress and to prevent plagiarism;
- Exercise continuing supervision of practical work to ensure essential compliance with Health and Safety requirements;
- Ensure that the work is completed in accordance with the specification requirements and can be assessed in accordance with the specified marking criteria and procedures.

(c) **Time control:** The time limit available to candidates to complete the assessment task is 20 hours as specified within the unit. Tasks will be set within a broader learning programme which will allow the acquisition of subject specific knowledge and the development of appropriate practical skills.

Controlled assessed work should be completed within the time limit and supervised and marked by the teacher. Some of the work, by its very nature, may be undertaken outside the centre, e.g. research work, testing, etc. But it is likely that using or applying this material will be undertaken under direct teacher supervision. With all internally assessed work, the teacher must be satisfied that the work submitted for assessment is the candidate's own work and be able to authenticate it using the specified procedure.

(d) **Collaboration control:** Candidates must complete and/or evidence all work individually. With reference to collaboration control, all assessment evidence will be provided by the individual candidate. Where group work is undertaken it is vital to be able to identify the unique individual contribution made by each candidate.

(e) **Resource control:** Candidates will need to be provided with the most appropriate materials and equipment to allow them full access to the marking criteria. For units A521 and A523 basic workshop equipment will be adequate, however, the use of specialist equipment and ICT may be

required to enable the candidate to produce the desired outcome. Candidates may also need access to resources and process only available outside the centre environment.

5.3.3 Quality assuring the controls

It is the responsibility of the Head of Centre to ensure that the controls set out in the specification and the individual units are imposed.

5.3.4 Completing the tasks

Candidates should be allowed sufficient time to complete all of the tasks. It is suggested that evidence is produced in several sessions, each focussing on a specific task within the overall task or scenario. These may be interspersed with opportunities to learn knowledge and develop appropriate practical skills

Each candidate must produce individual and authentic evidence for each of the tasks. It is particularly important that candidates working in groups, where the unit allows this, should still produce individual evidence of their contribution to ongoing group work and any final realisation or outcome.

Centre staff may give support and guidance to candidates. This support and guidance should focus on checking that candidates understand what is expected of them and that they work safely. Candidates will also need support and guidance when accessing materials provided by the centre.

Candidates may use information from any relevant source to help them with producing evidence for the tasks.

In general, candidates must be guided on the use of information from other sources to ensure that confidentiality and intellectual property rights are maintained at all times. It is essential that any material directly used from a source is appropriately and rigorously referenced. Where a dataset or case material is provided it is acknowledged that candidates in their responses will refer to situations in the assessment material but as this is fictitious this does not break any rules of confidentiality or copyright.

5.3.5 Presentation of work

Candidates must observe certain procedures in the production of controlled assessments.

- Tables, graphs and spreadsheets may be produced using appropriate ICT. These should be inserted into the report at the appropriate place.
- Any copied material must be suitably acknowledged.
- Quotations must be clearly marked and a reference provided wherever possible.
- Work submitted for moderation or marking must be clearly identified with the:

centre number;
centre name;
candidate number;
candidate name;
specification code and title;
task title.

Work submitted on paper for moderation must be secured either in a portfolio case or by treasury tags. Work submitted in digital format (CD or online) must be in a suitable file structure with each file clearly named with the unit code, centre number and candidate number.

5.4 Task marking

5.4.1 The OCR approach

For GCSE in Design and Technology: Food Technology OCR will assume a medium level of control in relation to the marking of tasks. All controlled assessed units will be marked by the centre assessor(s) using awarding body marking criteria and guidance and moderated by the OCR appointed moderator. For this GCSE external moderation will take the form of postal moderation or e-moderation where digital evidence is uploaded to OCR's E-repository.

5.4.2 Applying the assessment criteria

The starting point for marking the tasks is the Marking criteria within each unit. These contain levels of the skills, knowledge and understanding that the candidate is required to demonstrate. Before the start of the course, and for use at INSET training events, OCR will provide exemplification through real or simulated candidate work which will help to clarify the level of achievement the assessors will be looking for.

5.4.3 Use of 'best fit' approach to marking grids

The assessment task(s) for each unit should be marked by the teacher according to the given marking criteria within the relevant unit using a 'best fit' approach. For each of the assessment criteria, one of the descriptors provided in the marking grid that most closely describes the quality of the work being marked should be selected.

Marking should be positive, rewarding achievement rather than penalising failure or omissions. The award of marks **must be** directly related to the marking criteria.

Teachers use their professional judgement in selecting the descriptor that best describes the work of the candidate.

To select the most appropriate mark within the descriptor, teachers should use the following guidance:

- Where the candidate's work *convincingly* meets the statement, the highest mark should be awarded;
- Where the candidate's work *adequately* meets the statement, the most appropriate mark in the middle range should be awarded;
- Where the candidate's work *just* meets the statement, the lowest mark should be awarded.

Centres should use the full range of marks available to them; centres must award *full* marks in any band for work which fully meets that descriptor. This is work which is 'the best one could expect from candidates working at that level'. Where there are only two marks within a band the choice will be between work which, in most respects, meets the statement and work which just meets the statement. For wider mark bands the marks on either side of the middle mark(s) for 'adequately met' should be used where the standard is lower or higher than 'adequate' but **not** the highest or lowest mark in the band.

Only one mark per unit will be entered. The final mark for the candidate for each unit is out of a total of 60 and is found by totalling the marks for each of the marking criteria strands.

5.4.4 Authentication

Teachers/course tutors must be confident that the work they mark is the candidate's own. This does not mean that a candidate must be supervised throughout the completion of all work but the teacher/course tutor must exercise sufficient supervision, or introduce sufficient checks, to be in a position to judge the authenticity of the candidate's work.

Wherever possible, the teacher/course tutor should discuss work-in-progress with candidates. This will not only ensure that work is underway in a planned and timely manner but will also provide opportunities for assessors to check authenticity of the work and provide general feedback.

Candidates must not plagiarise. Plagiarism is the submission of another's work as one's own and/or failure to acknowledge the source correctly. Plagiarism is considered to be malpractice and could lead to the candidate being disqualified. Plagiarism sometimes occurs innocently when candidates are unaware of the need to reference or acknowledge their sources. It is therefore important that centres ensure that candidates understand that the work they submit must be their own and that they understand the meaning of plagiarism and what penalties may be applied. Candidates may refer to research, quotations or evidence but they must list their sources. The rewards from acknowledging sources, and the credit they will gain from doing so, should be emphasised to candidates as well as the potential risks of failing to acknowledge such material. Centres should reinforce this message to ensure candidates understand what is expected of them.

Please note: Centres must confirm to OCR that the evidence produced by candidates is authentic. The Centre Authentication Form (CCS160) provided includes a declaration for assessors to sign. It is a requirement of the QCA Common Criteria for all Qualifications that proof of authentication is received. Failure to provide Centre aesthetician could result in candidates being penalised.

5.4.5 Internal standardisation

It is important that all internal assessors, working in Design & Technology, work to common standards. Centres must ensure that the internal standardisation of marks across assessors and teaching groups takes place using an appropriate procedure.

This can be done in a number of ways. In the first year, reference material and OCR training meetings will provide a basis for Centres' own standardisation. In subsequent years, this, or Centres' own archive material, may be used. Centres are advised to hold preliminary meetings of staff involved to compare standards through cross-marking a small sample of work. After most marking has been completed, a further meeting at which work is exchanged and discussed will enable final adjustments to be made.

5.4.6 Moderation

- Teachers mark the tasks using the assessment criteria and guidelines provided by OCR.
- OCR moderates their marking.
- OCR moderators externally moderate the teacher's marking to ensure that the assessment criteria have been applied fairly and consistently to the national standard. On the basis of this moderation scaled adjustments may be recommended

Following marking and internal standardisation by the centre, candidate marks are submitted to OCR by 10 January for the January examination or 15 May for the June examination, after which moderation takes place in accordance with OCR procedures. The purpose of moderation is to ensure that the standard of the award of marks for work is the same for each centre and that each teacher has applied the standards appropriately across the range of candidates within the centre.

The sample of work which is presented to the Moderator for moderation must show how the marks have been awarded in relation to the marking criteria defined in Appendix B

Each candidate's work should have a cover sheet attached to it with a summary of the marks awarded for each task. If the work is to be submitted in digital format this cover sheet should also be submitted electronically within each candidate's files.

5.5 Minimum Requirements for Controlled Assessment

There should be clear evidence that work has been attempted and some work produced.

If a candidate submits no work for an internally assessed component, then the candidate should be indicated as being absent from that component on the mark sheets submitted to OCR. If a candidate completes any work at all for an internally assessed component, then the work should be assessed according to the internal assessment objectives and marking instructions and the appropriate mark awarded, which, for work worthy of no marks will be zero.

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6 Technical Information

6.1 Making Unit Entries

Centres can enter candidates for all units, in a traditional linear fashion, at the end of the course OR at any June or January session (see terminal rules for restrictions).

Please note that centres must be registered with OCR in order to make any entries, including estimated entries. It is recommended that centres apply to OCR to become a registered centre well in advance of making their first entries. Centres must have made an entry for a unit in order for OCR to supply the appropriate forms and/or moderator details for controlled assessments.

It is essential that unit entry codes are quoted in all correspondence with OCR.

6.2 Terminal Rules

In order to comply with QCA's subject criteria terminal rules candidates must take at least 40% of the assessment in the same series they enter for either the full course or short course qualification certification.

This rule means that candidates certificating for GCSE Design & Technology: Food Technology (J302) must also be entered in the same examination session for ANY two of the four units.

This rule means that candidates certificating for GCSE Design & Technology: Food Technology (J042) must also be entered in the same examination session for ANY one of the two units.

6.3 Unit and Qualification Re-sits

Candidates may re-sit each unit once before entering for certification for a GCSE or GCSE (Short Course).

Candidates may enter for the qualifications an unlimited number of times.

6.4 Making Qualification Entries

Candidates may enter for:

- GCSE certification (entry code J302).
- GCSE (Short Course) certification (entry code J042).

A candidate who has completed all the units required for the qualification must enter for certification in the same examination series in which the terminal rules are satisfied.

Candidates must enter for qualification certification (J302 or J042) separately from unit entries. If a certification entry is **not** made, no overall GCSE grade can be awarded.

Short Course GCSE certification is available from June 2010

Full GCSE certification is available from June 2010

6.5 Grading

Both GCSE (Short Course) and GCSE results are awarded on the scale A*-G. Units are awarded a* to g. Grades are awarded on certificates. However, results for candidates who fail to achieve the minimum grade (G or g) will be recorded as *unclassified* (U or u) and this is **not** certificated.

In unitised schemes candidates can take units across several different series. They can also re-sit units or choose from optional units available. When working out candidates' overall grades OCR needs to be able to compare performance on the same unit in different series when different grade boundaries have been set, and between different units. OCR uses uniform marks to enable this to be done.

A candidate's uniform mark is calculated from the candidate's raw marks. The raw mark boundary marks are converted to the equivalent uniform mark boundary. Marks between grade boundaries are converted on a pro rata basis.

When unit results are issued, the candidate's unit grade and uniform mark are given. The uniform mark is shown out of the maximum uniform mark for the unit e.g. 41/80.

The specification is graded on a Uniform Mark Scale. The uniform mark thresholds for each of the assessments are shown below:

(GCSE) Unit Weighting	Maximum Unit Uniform Mark	a*	a	b	c	d	e	F	g	u
20%	80	72	64	56	48	40	32	24	16	0
30%	120	108	96	84	72	60	48	36	24	0

Candidate's uniform marks for each module are aggregated and grades for the specification are generated on the following scale.

Qualification	Max UMS	Qualification Grade									U
		A*	A	B	C	D	E	F	G		
GCSE (Short Course)	200	180	160	140	120	100	80	60	40	0	0
GCSE	400	360	320	280	240	200	160	120	80	0	0

Awarding Grades

The written papers will have a total weighting of 40% and controlled assessment a weighting of 60%.

A candidate's uniform mark for each paper will be combined with the uniform mark for the controlled assessment to give a total uniform mark for the specification. The candidate's grade will be determined by the total uniform mark.

6.6 Result Enquiries and Appeals

Under certain circumstances, a centre may wish to query the grade available to one or more candidates or to submit an appeal against an outcome of such an enquiry. Enquiries about unit results must be made immediately following the series in which the relevant unit was taken.

For procedures relating to enquiries on results and appeals, centres should consult the *Administrative Guide for General Qualifications* and the document *Enquiries about Results and Appeals – Information and Guidance for Centres* produced by the Joint Council. Copies of the most recent editions of these papers can be obtained from OCR.

6.7 Shelf-Life of Units

Individual unit results, prior to certification of the qualification, have a shelf-life limited only by that of the qualification.

6.8 Guided Learning Hours

GCSE Design and Technology: Food Technology requires 120-140 guided learning hours in total.

GCSE (Short Course) in Design and Technology: Food Technology requires 60-70 guided learning hours in total.

6.9 Code of Practice/Subject Criteria/Common Criteria Requirements

These specifications comply in all respects with the current *GCSE, GCE and AEA Code of Practice* as available from the QCA website, *The Statutory Regulation of External Qualifications 2004* and the subject criteria for GCSE Design and Technology.



6.10 Prohibited Qualifications and Classification Code

Candidates who enter for this OCR GCSE specification may not also enter for any other GCSE specification with the certification title *Design and Technology: Food Technology* in the same examination series.

Every specification is assigned to a national classification code indicating the subject area to which it belongs.

The classification code for these specifications is 9020.

Centres should be aware that candidates who enter for more than one GCSE qualification with the same classification code will have only one grade (the highest) counted for the purpose of the School and College Achievement and Attainment Tables

6.11 Disability Discrimination Act Information Relating to this Specification

GCSEs often require assessment of a broad range of competences. This is because they are general qualifications and, as such, prepare candidates for a wide range of occupations and higher level courses.

The revised GCSE qualifications and subject criteria were reviewed to identify whether any of the competences required by the subject presented a potential barrier to any disabled candidates. If this was the case, the situation was reviewed again to ensure that such competences were included only where essential to the subject. The findings of this process were discussed with disability groups and with disabled people.

Reasonable adjustments are made for disabled candidates in order to enable them to access the assessments and to demonstrate what they know and can do. For this reason, very few candidates will have a complete barrier to the assessment. Information on reasonable adjustments is found in *Regulations and Guidance Relating to Candidates who are Eligible for Adjustments in Examinations* produced by the Joint Council www.jcq.org.uk.

Candidates who are unable to access part of the assessment, even after exploring all possibilities through reasonable adjustments, may still be able to receive an award based on the parts of the assessment they have taken.

Candidates with a visual impairment may find this subject difficult to access fully.

6.12 Arrangements for Candidates with Particular Requirements

Candidates who are not disabled under the terms of the DDA may be eligible for access arrangements to enable them to demonstrate what they know and can do. Candidates who have been fully prepared for the assessment but who are ill at the time of the examination, or are too ill to take part of the assessment, may be eligible for special consideration. Centres should consult the *Regulations and Guidance Relating to Candidates who are Eligible for Adjustments in Examinations* produced by the Joint Council.

6.13 OCR Repository

The OCR Repository allows centres to store controlled assessment electronically and to submit their moderation sample in electronic format.

The OCR GCSE Design and Technology: Food Technology units A521 and A523 can be submitted electronically: please check Section 6.1 for unit entry codes for the OCR Repository.

More information on the OCR-Repository can be found in Appendix D: Guidance for the Production of Electronic Assessment.

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7 Other Specification Issues

7.1 Overlap with other Qualifications

There is no significant overlap between the content of these specifications and those for other GCSE qualifications.

7.2 Progression from these Qualifications

GCSE qualifications are general qualifications which enable candidates to progress either directly to employment, or to proceed to further qualifications.

Progression to further study from GCSE will depend upon the number and nature of the grades achieved. Broadly, candidates who are awarded mainly Grades D to G at GCSE could either strengthen their base through further study of qualifications at Level 1 within the National Qualifications Framework or could proceed to Level 2. Candidates who are awarded mainly Grades A* to C at GCSE would be well prepared for study at Level 3 within the National Qualifications Framework.

Candidates may progress to GCE in Home Economics. This specification also provides progression from the Entry Level Certificate in Food Technology.

7.3 Spiritual, Moral, Ethical, Social, Legislative, Economic and Cultural Issues

This specification offers opportunities which can contribute to an understanding of these issues in all the units.

7.4 Sustainable Development, Health and Safety Considerations and European Developments consistent with international agreements

These specifications support these issues, consistent with current EU agreements, in all units

7.5 Avoidance of Bias

OCR has taken great care in preparation of these specifications and assessment materials to avoid bias of any kind.

7.6 Language

These specifications and associated assessment materials are in English only.

7.7 Key Skills

This specification provides opportunities for the development of the Key Skills of *Communication, Application of Number, Information Technology, Working with Others, Improving Own Learning and Performance and Problem Solving* at Levels 1 and/or 2. However, the extent to which this evidence fulfils the Key Skills criteria at these levels will be totally dependent on the style of teaching and learning adopted for each unit.

The following table indicates where opportunities may exist for at least some coverage of the various Key Skills criteria at Levels 1 and/or 2 for each unit.

Unit	C		AoN		IT		WwO		IoLP		PS	
	1	2	1	2	1	2	1	2	1	2	1	2
A521	✓	✓			✓	✓	✓		✓	✓	✓	✓
A522	✓	✓			✓	✓			✓	✓	✓	✓
A523	✓	✓			✓	✓			✓	✓	✓	✓
A524	✓	✓	✓	✓	✓	✓	✓					

Detailed opportunities for generating Key Skills evidence through this specification are posted on the OCR website (www.ocr.org.uk). A summary document for Key Skills Coordinators showing ways in which opportunities for Key Skills arise within GCSE courses has been published.

7.8 ICT

In order to play a full part in modern society, candidates need to be confident and effective users of ICT. Where appropriate, candidates should be given opportunities to use ICT in order to further their study of CAD, CAM, data handling, word processing.

The assessment of this course, for example, requires candidates to *produce creative and original ideas by generating, developing and communicating designs using appropriate strategies including the use of CAD*.

7.9 Citizenship

Since September 2002, the National Curriculum for England at Key Stage 4 has included a mandatory programme of study for Citizenship. Parts of this Programme of Study may be delivered through an appropriate treatment of other subjects.

There are opportunities for developing knowledge, skills and understanding of citizenship issues particularly in units A521 and A523



Appendix A: Grade Descriptions

Grade descriptions are provided to give a general indication of the standards of achievement likely to have been shown by candidates awarded particular grades. The descriptions must be interpreted in relation to the content in the specification; they are not designed to define that content. The grade awarded will depend in practice upon the extent to which the candidate has met the assessment objectives overall. Shortcomings in some aspects of the assessment may be balanced by better performance in others.

The grade descriptors have been produced by the regulatory authorities in collaboration with the awarding bodies.

Grade F

Candidates recall, select and communicate knowledge and understanding of basic aspects of design and technology, including its wider effects.

They apply limited knowledge, understanding and skills to plan and carry out simple investigations and tasks, with an awareness of the need for safety and precision. They modify their approach in the light of progress.

They review their evidence and draw basic conclusions.

Grade C

Candidates recall, select and communicate sound knowledge and understanding of design and technology, including its wider effects.

They apply knowledge, understanding and skills in a range of situations to plan and carry out investigations and tasks. They test their solutions, working safely and with precision.

They review the evidence available, analysing and evaluating some information clearly, and with some accuracy. They make judgements and draw appropriate conclusions.

Grade A

Candidates recall, select and communicate detailed knowledge and thorough understanding of design and technology, including its wider effects.

They apply relevant knowledge, understanding and skills in a range of situations to plan and carry out investigations and tasks effectively. They test their solutions, working safely and with a high degree of precision.

They analyse and evaluate the evidence available, reviewing and adapting their methods when necessary. They present information clearly and accurately, making reasoned judgements and presenting substantiated conclusions.

Appendix B: Marking Criteria for Controlled Assessments

Unit A521

Basic ability	Demonstrates ability	Works competently
<p>Cultural understanding</p> <ul style="list-style-type: none">Identifies using one or two simple examples of how cultural issues have influenced the range of food products available today.Identifies using one or two examples how wise choice of food products can promote healthy lifestyles.	<p>Cultural understanding</p> <ul style="list-style-type: none">Identifies using examples how cultural issues have influenced the range of food products available today.Identifies using examples how wise choice of food products can promote healthy lifestyles.	<p>Cultural understanding</p> <ul style="list-style-type: none">Identifies using appropriate examples how cultural issues have influenced the range of food products available today.Identifies and compares using examples how wise choice of food products can promote healthy lifestyles.
[0 - 2]	[3 - 5]	[6 - 8]
<p>Creativity</p> <ul style="list-style-type: none">Makes simple/limited links between principles of good design and technology knowledge.Existing products identified with some evaluation.	<p>Creativity</p> <ul style="list-style-type: none">Identifies associations linking principles of good design and technology knowledge.Existing products identified considering some of the needs of the intended user.	<p>Creativity</p> <ul style="list-style-type: none">Identifies complex associations linking principles of good design and technology knowledge.Existing products identified and fully evaluated against the needs of the intended user.
[0 - 3]	[4 - 7]	[8 - 10]

Designing

- Using results from research and a brief produces a simple specification for the product.
- Record design ideas using simple techniques.
- Apply simple tralling procedures.
- Make some decisions about the ingredients and equipment for the final product.

[0 - 4]

Designing

- Using results from research and a brief produces a suitable specification for the product.
- Record creative design ideas through appropriate techniques.
- Apply trailling procedures.
- Make decisions about ingredients and equipment and any changes that need to be made to the final product.

[5 - 9]

Designing

- Using results from research and a brief produces a detailed specification for the product.
- Record creative and innovative design ideas using appropriate presentation techniques.
- Apply detailed trailling procedures.
- Make reasoned decisions about ingredients and equipment and any changes that need to be made to the final product.

[10 - 13]

Basic ability	Demonstrates ability	Works competently
<p>Making</p> <ul style="list-style-type: none"> Organise activities. Select and use appropriate ingredients. Select and use appropriate equipment <p>• Work safely and hygienically with a limited range of ingredients</p> <p>• Prepare, shape, form, mix, assemble and finish food products.</p> <p>• Products will exhibit a reasonable standard of outcome. (photographic evidence)</p>	<p>Making</p> <ul style="list-style-type: none"> Organise activities. Select and use appropriate ingredients. Select and use appropriate equipment <p>• Work safely and hygienically</p> <p>• Work effectively to prepare, shape, form, mix, assemble and finish food products.</p> <p>• Products will exhibit a good standard of outcome. (photographic evidence)</p>	<p>Making</p> <ul style="list-style-type: none"> Organise activities. Select and use appropriate ingredients. Select and use appropriate equipment <p>• Work safely and hygienically</p> <p>• Work skillfully to prepare, shape, form, mix, assemble and finish food products.</p> <p>• Products will exhibit a high quality outcome. (photographic evidence)</p>
[0 - 5]	[6 - 11]	[12 - 16]
<p>• Apply limited nutritional knowledge.</p> <p>• Produce a simple flowchart for the final product.</p>	<p>• Apply nutritional knowledge to suggest a possible modification to design ideas.</p> <p>• Produce a flowchart that includes all key stages for the final product.</p>	<p>• Apply detailed nutritional knowledge to suggest possible modifications to design ideas.</p> <p>• Produce a detailed flowchart that specifies an effective order of sequences for the final product.</p>
[0 - 1]	[2 - 3]	[4]
Critical Evaluation	Critical Evaluation	Critical Evaluation
<ul style="list-style-type: none"> Evaluation through superficial testing. 	<ul style="list-style-type: none"> Evaluation with reference to the specification through relevant testing leading to a possible improvement. 	<ul style="list-style-type: none"> Critical evaluation related to the specification through detailed testing with meaningful conclusions leading to suggestions for possible improvements.
[0 - 1]	[2 - 3]	[4 - 5]

Basic ability	Demonstrates ability	Works competently
<p>Designing</p> <ul style="list-style-type: none"> • Produces a simple specification for the chosen design brief. <p style="text-align: center;">[0 - 1]</p>	<p>Designing</p> <ul style="list-style-type: none"> • Produces a suitable specification for the chosen design brief. <p style="text-align: center;">[2 - 3]</p>	<p>Designing</p> <ul style="list-style-type: none"> • Produces a detailed specification for the chosen design brief. <p style="text-align: center;">[4]</p>
<ul style="list-style-type: none"> • Record design ideas using a limited range of strategies. • Present a cursory evaluation with unsupported choice of design proposal. • Apply simple trailling procedures. <p style="text-align: center;">[0 - 5]</p>	<ul style="list-style-type: none"> • Record creative design ideas and communicate these by using appropriate strategies. • Select design proposal by clear evaluation. • Apply trailling procedures. <p style="text-align: center;">[6 - 8]</p>	<ul style="list-style-type: none"> • Record creative and innovative design ideas and communicate these in detail using appropriate strategies. • Select design proposal chosen as a result of detailed evaluation. • Apply detailed trailling procedures. <p style="text-align: center;">[10 - 12]</p>

Basic ability	Demonstrates ability	Works competently
<p>Making Trialling/Product Development/Final Product</p> <ul style="list-style-type: none"> Organise activities. Select and use appropriate ingredients. Select and use appropriate equipment Work safely and hygienically Prepare, shape, form, mix, assemble and finish food products. Products will exhibit a reasonable standard of outcome. (photographic evidence) Apply simple trialling procedures during product development. 	<p>Making Trialling/Product Development/Final Product</p> <ul style="list-style-type: none"> Organise activities. Select and use appropriate ingredients. Select and use appropriate equipment Work safely and hygienically Work effectively to prepare, shape, form, mix, assemble and finish food products. Products will exhibit a good standard of outcome. (photographic evidence) Apply trialling procedures to suggest possible modifications during product development. 	<p>Making Trialling/Product Development/ Final Product</p> <ul style="list-style-type: none"> Organise activities. Select and use appropriate ingredients. Select and use appropriate equipment Work safely and hygienically Work skillfully to prepare, shape, form, mix, assemble and finish food products. Products will exhibit a high quality outcome. (photographic evidence) Apply detailed trialling procedures to suggest possible modifications during product development.
[0 - 9]	[10 - 17]	[18 - 24]
<p>Final Product Information</p> <ul style="list-style-type: none"> Make some decisions about ingredients and equipment. Produce a simple Product Specification. Produce a simple forward plan for the trialling of design ideas Produce a simple flowchart for the final product. 	<p>Final Product Information</p> <ul style="list-style-type: none"> Make decisions about ingredients and equipment. Produce a Product Specification. Produce a forward plan for the trialling of design ideas. Produce a flowchart that includes all key stages for the final product. 	<p>Final Product/Information</p> <ul style="list-style-type: none"> Make reasoned decisions about ingredients and equipment. Produce a detailed Product Specification. Produce a detailed forward plan for the trialling of design ideas. Produce a detailed flowchart that specifies an effective order of sequences for the final product.
[0 - 2]	[3 - 4]	[5 - 6]
[0 - 2]	[3 - 4]	[5 - 6]

Basic ability	Demonstrates ability	Works competently
<p>Critical Evaluation</p> <ul style="list-style-type: none">Evaluation through superficial testing.	<p>Critical Evaluation</p> <ul style="list-style-type: none">Give an evaluation of the finished product with reference to the product specification.Show superficial testing and reflect how to improve the product.	<p>Critical Evaluation</p> <ul style="list-style-type: none">Critically evaluate the finished product against the product specification.Undertake detailed testing; present meaningful conclusions leading to proposals for modifications to improve the product.

[0 – 2]

[3 - 5]

[6 – 8]

Appendix C: Coursework Themes – Unit A561 and Unit A563

Unit A521

The task for this unit is for the candidate to produce a prototype product, capable of evaluation and a concise portfolio of work to support the designing and modelling process.

Candidates **must** select one of the following themes as a starting point for the task.

This is a mandatory controlled assessment unit.

Teachers must mark the task using the marking criteria provided in Appendix B (unit A521) of this specification.

Product/Theme	Outline/starting point
Snack	New product for selected target group
Chosen culture	New product for general sale based on a specific culture
Packed lunch box	For school, day trip, country walk
Dessert	For home, school, pub meal
Ready meal	For students living away from home, for busy professionals
Luxury range	Food for occasions where money doesn't matter
Special diet	Slimming foods, allergies, diet related diseases
Celebration	Food for an identified special occasion
School vending machine	New products that are attractive and healthy
'Eating on the go'	Easily managed food for identified situations.

Unit A523

The task for this unit is for the candidate to design and manufacture a product. The starting point for this task **must** be selected from a theme set by OCR and listed below.

The task can be linked to a candidate's interest or such other influences as competitions, commerce or the community.

Selection of an appropriate theme for the task will be made by candidate and Centre taking account of constraints relating to resources and time available for completion of the task.

Candidates **MUST NOT** choose to undertake a task that is similar to the task that they have undertaken in Unit A521 of this specification.

Teachers must mark the task using the marking criteria provided in Appendix B (unit A523) of this specification.

In order to skilfully Design and Make their prototype product candidates should refer to the content of unit A524 and use designing, planning, making, materials, tools, equipment and process as appropriate.

FOOD TECHNOLOGY THEMES

Product that will increase intake of fruit

Product that will increase intake of vegetables

Lower in fat product

Low in sugar content

Low in salt product

High in Fibre product

Product that will increase intake of iron

Hand held snack

Economy range product

Luxury range product

Single portion microwavable product

Edible cased product

Product suitable for inclusion in a packed lunch box

A baked product (cake, biscuit, pastry, bread)

Chilled dessert

Product reflecting a chosen culture

Product for a chosen celebration

Product for a chosen special diet

Appendix D: Guidance for the Production of Electronic Controlled Assessment

The materials produced for Controlled Assessment in Units A521 and A523 form a Controlled Assessment portfolio, stored electronically.

Structure for evidence

A Controlled Assessment portfolio is a collection of folders and files containing the candidate's evidence. Folders should be organised in a structured way so that the evidence can be accessed easily by a teacher or moderator. This structure is commonly known as a folder tree. It would be helpful if the location of particular evidence is made clear by naming each file and folder appropriately and by use of an index, called 'Home Page.'

There should be a top level folder detailing the candidate's centre number, candidate number, surname and forename, together with the Unit code e.g. A521, so that the portfolio is clearly identified as the work of one candidate.

Each candidate produces evidence for the Controlled Assessment. The evidence for each element of the controlled assessment should be contained within a separate folder within the portfolio. Each of these folders is likely to contain separate files.

Each candidate's Controlled Assessment portfolio should be stored in a secure area on the centre network. Prior to submitting the Controlled Assessment portfolio to OCR, the centre should add a folder to the folder tree containing Controlled Assessment and summary forms.

Data formats for evidence

In order to minimise software and hardware compatibility issues it will be necessary to save candidates' work using an appropriate file format. (Further information on this topic is provided in the separate OCR guidance on digital Controlled Assessment submissions).

Candidates must use formats appropriate to the evidence that they are providing and appropriate to viewing for assessment and moderation. Open file formats or proprietary formats for which a downloadable reader or player is available are acceptable. Where this is not available, the file format is not acceptable.

Electronic Controlled Assessment is designed to give candidates an opportunity to demonstrate what they know, understand and can do using current technology. Candidates do not gain marks for using more sophisticated formats or for using a range of formats.

Evidence submitted is likely to be in the form of word processed documents, PowerPoint presentations, digital photos and digital video.

To ensure compatibility, all files submitted must be in the formats listed below. Word processed documents or PowerPoint presentations must be converted to HTML or PDF formats before submission. OCR will not accept compressed (zipped) file formats. Where new formats become available that might be acceptable, OCR will provide further guidance.

It is the centre's responsibility to ensure that the electronic portfolios submitted for moderation are accessible to the moderator and fully represent the evidence available for each candidate.

Accepted File Formats

Movie formats for digital video evidence

MPEG (*.mpg)

QuickTime movie (*.mov)

Macromedia Shockwave (*.aam)

Macromedia Shockwave (*.dcr)

Flash (*.swf)

Windows Media File (*.wmf)

MPEG Video Layer 4 (*.mp4)

Audio or sound formats

MPEG Audio Layer 3 (*.mp3)

Graphics formats including photographic evidence

JPEG (*.jpg)

Graphics file (*.pcx)

MS bitmap (*.bmp)

GIF images (*.gif)

Animation formats

Macromedia Flash (*.fla)

Structured markup formats

HTML (*html, *htm)

XML (*xml)

CSS (*css)

XSL (*xsl/*xslt)

Text formats

PDF (.pdf)

Please consult OCR guidance on digital Controlled Assessment submissions for advice on compatibility of versions of these file formats.